REMARKS

Claim Amendments

Claims 2-5 have been amended for clarity and claims 7-8 have been added. Support for the claim amendments may be found throughout the substitute specification and particularly in paragraphs [0004], [0016], [0024], [0026], [0030], [0031], [0041], and [0053]. Upon entry of the new claims and claim amendments, claims 2-8 will be pending in the application.

Interview Summary

Applicant appreciates the courtesies extended by Examiner Akintola during a telephonic interview with Mr. Herz and Mr. Dunnam on August 30, 2011. During that interview, the prior art rejection over Wuthrich was discussed in connection with claim 1. Clarifying amendments were discussed, but no agreement was reached regarding patentability. The proposed amendments to claim 2 are believed to address many of the issues discussed during the interview. Reconsideration in view of these amendments and the following comments is requested.

Claim Rejections - 35 U.S.C. §103(a)

Claims 2-6 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable as obvious over an article by Wuthrich et al. entitled "Daily Stock Market Forecast from Textual Web Data" ("Wuthrich"). These rejections are traversed in view of the clarifying amendments to claim 2.

Claim 2 recites a method of predicting stock market behavior using trading software implemented on a processor. The trading software includes a data analysis tool implementing natural language processing and a stock predictor implementing a stock prediction model. The amended method now includes the data analysis tool performing the steps of:

extracting information from news media relating to a particular publicly traded company using the natural language processing to parse or pattern match on words in the news media to identify natural language text describing activities or announcements of the particular publicly traded company that is in or near sentences containing a name of the particular publicly traded company and to automatically fill templates with the natural language text;

using a clustering algorithm to cluster at least some of the templates into groups that are statistically correlated with changes in stock price of the particular publicly traded company; and

determining a statistical significance of the changes in stock price of the particular publicly traded company based on information in the clustered templates; and

a stock predictor that performs the step of:

predicting changes in price of the stock of the particular publicly traded company based on new information about the particular publicly traded company if information of the type included in the new information has in the past caused a statistically significant change in the stock price in the particular publicly traded company.

As noted in previous responses and during the interview, the method of claim 2 predicts changes in the price of the stock of a particular publicly traded company by relating changes in stock price of the particular publicly traded company to information stored in a template including natural language text describing activities or announcements of the particular publicly traded company. Changes in price of the stock of the particular publicly traded company may be predicted based on new information about the particular publicly traded company if information of the type included in any new information has in the past caused a statistically significant change in the stock price in the particular publicly traded company. Thus, the gathered information is related to a particular company for which stock price predictions are to be made.

Based on feedback from the examiner during the interview, claim 2 has been further amended to specify how the templates are created and how information in the templates is correlated to the stock price of the particular publicly traded company. In particular, claim 2 now recites that the templates are created by extracting information from news media relating to a particular publicly traded company using the natural language processing to parse or pattern match on words in the news media to identify natural language text describing activities or announcements of the particular publicly traded company that is in or near sentences containing a name of the particular publicly traded company. The templates are automatically filled with this natural language text. Then, a clustering algorithm clusters at least some of the templates into groups that are statistically correlated with changes in stock price of the particular publicly

traded company. These features in combination with the other features of claim 2 are not shown or suggested by Wuthrich.

As noted in earlier responses and during the interview, Wuthrich describes a method of predicting the daily closing values of major stock market indices using information published in articles on the Internet - mostly textual articles appearing in the leading and influential financial newspapers. Keywords in the textual language, such as "bond strong," "dollar falter," "property weak," "dow rebound," "technology rebound strongly," etc. (bottom of column 2 of page 2721) are taken from the articles by a domain expert and weighted if determined to be influential factors that may potentially move the stock market indices. As noted previously, such keyword data is not information "relating to a particular publicly traded company" but is instead macroeconomic data relating to stock indices. Moreover, such keyword data is not used by Wuthrich to "automatically fill templates" with "natural language text describing activities or announcements of said particular publicly traded company that is in or near sentences containing a name of said particular publicly traded company" as now claimed. Wuthrich nowhere teaches how the keyword data is related to individual stocks and does not automatically fill templates with captured natural language text or use clustering algorithms to statistically correlate clusters of templates containing such information with changes in stock price of the particular publicly traded company. In fact, Wuthrich provides no specific teachings relating to how the gathered keyword data is related to the stock index and certainly does not further relate the keyword data to the price of an individual stock as now claimed with particularity.

For at least these reasons, Applicant submits that even if one skilled in the art would have known to modify the teachings of Wuthrich to relate natural language words to individual stocks as opposed to the stock market indices as the examiner alleges, the method of claim 2 would not have resulted. Withdrawal of the rejection of claim 2 is solicited.

Applicant again submits that the teachings of Wuthrich do not suggest the methods of claims 3-6.

Claim 3 further recites that the clustering algorithm clusters templates containing the extracted information of the particular publicly traded company with templates containing

extracted information of another company whose stock price has been shown to be similarly affected by information of the type included in the new information. Wuthrich does not teach the use of clustering algorithms and certainly does not teach clustering templates of information relating to different companies as recited in claim 3. In rejecting claim 3, the examiner alleges that tables of information collected by Wuthrich correspond to the claimed clusters of information. Applicant has addressed this argument by amending claim 3 to more particularly recite a clustering algorithm that clusters templates of information about different companies where the type of information stored is known to similarly affect the stock price of both companies. No such teachings are provided by Wuthrich. Withdrawal of the rejection as applied to claim 3 is solicited.

Claim 4 further recites that natural language processing is used to parse a source of information for information about the particular publicly traded company and that the references to the publicly traded company are standardized, co-referenced to a pronoun, and added to the template for the company. The examiner has pointed to no such teachings in the Wuthrich article and has instead alleged that claim 4 is directed to "non functional descriptive material" that is not to be given any patentable weight. The examiner's interpretation of claim 4 is clearly erroneous. Claim 4 recites the substantive steps of relating different proper names to a standard reference to the particular publicly traded company, determining when a pronoun relates to the particular publicly traded company and co-referencing the information referenced to the pronoun to the publicly traded company, adding the new information to a template, and adding additional information about the particular publicly traded company (*e.g.*, data from databases and/or derived values) to the template. Clearly, these data processing steps require much more than descriptive material on a storage medium. Accordingly, withdrawal of the rejection of claim 4 is solicited.

Claim 5 further recites the step of the clustering algorithm clustering templates containing information about different publicly traded companies into similar cluster groups and the data analysis tool determining changes in stock price of the companies in the cluster group at different times in response to comparable information and estimating the statistical probability of a change

in the stock price of the publicly traded company being monitored in response to new information statistically correlated to the information in the comparable information. Again, the examiner has pointed to no teachings in Wuthrich of clustering information using a clustering algorithm as claimed, and Applicant can find none. Withdrawal of the rejection as applied to claim 5 is solicited.

Claim 6 relates to further conducting a stock trade based on the predicted change in stock price. The Wuthrich article relates to predicting the direction of the stock market – not to predicting the direction of a particular stock and making a trade for that stock based on such information. The Examiner has not provided a reference to any teaching in Wuthrich that would suggest the result of the information monitoring is to conduct a stock trade for a particular stock and Applicant can find no such teaching. Withdrawal of the rejection of claim 6 is solicited.

For at least these reasons, withdrawal of the rejections of claims 2-6 as being obvious over Wuthrich is appropriate and is solicited.

Finally, new claims 7 and 8 relate to features described in paragraphs [0030]-[0031] of the substitute specification relating to the steps of weighting textual attributes of the news media and pattern matching the weighted textual attributes for current and previous news media to provide statistical feedback comparing current news media to previous new media to determine similarities between the current news media and the previous news media. This allows for refinement of the template data over time. Similarly, written advice from market experts is weighted in accordance with the historical behavior of the market with respect to that written advice. No such teachings are provided by Wuthrich. Allowance of claims 7 and 8 is solicited.

Conclusion

The rejection of the claims over Wuthrich is improper and should be withdrawn.

Allowance of all claims and issuance of a Notice of Allowability are solicited.

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